

REMARKS

I. Status of the Claims

Claims 1, 3, 4, 8, 18, 26, 27, 29, 35, 73, 75, 78, 81-83, and 87-89 are now pending in this application. Claims 2, 5-7, 9-17, 19-25, 28, 30-34, 36-72, 74, 76, 77, 79, 80, 84-86, and 90-121 were cancelled previously, without prejudice or disclaimer. Claim 1 is amended herein, for which exemplary support for this amendment can be found in the claims and specification as originally filed, for example, original claims 4 and 29, and the Examples. Applicants note that the previously presented limitation of claim 1, "wherein the at least one constituent monomer of the at least one first block differs from the at least one constituent monomer of the at least one second block," is presently deleted from the claim for simplicity because it is redundant in view of the newly added limitations. Claims 4 and 29 are amended herein for consistency with claim 1 as amended. Accordingly, the specification provides written description support for these amendments, and no new matter has been added.

II. Rejections Under 35 U.S.C. § 103(a)

The Examiner maintains the following rejections previously presented for the reasons of record. Specifically, the Examiner maintains the rejection of claims 1, 3-4, 8, 18, 26, 27, 29, 35, 73, 75, 78, 79, 81-83, and 87-89 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,663,855 to Frechet et al. ("Frechet A"), U.S. Patent No. 6,685,925 to Frechet et al. ("Frechet B"), U.S. Patent No. 6,197,883 to Schimmel et al., or U.S. Patent No. 6,153,206 to Anton et al. ("Anton"), in view of U.S. Patent No. 5,994,446 to Graulus et al. ("Graulus"), U.S. Patent No. 6,518,364 to

Charmot et al. ("Charmot"), or U.S. Patent No. 6,410,666 to Grubbs et al. ("Grubbs").

See June 4, 2009, Final Office Action at 3-9.

Applicants respectfully traverse for the reasons of record and the additional reasons presented below.

Schimmel

The Examiner alleges that Schimmel

discloses the inclusion of a minor amount of at least one hydroxyl functional ethylenically unsaturated monomer (i.e. hydroxyalkyl (meth)acrylate) in each of the first and second blocks, in a random or gradient fashion. This hydroxy functional monomer is taught to independently occupy [] one or more blocks at any position within either or both of the first and second block in a random fashion or a gradient fashion. Thus, this would allow the permutation of the recited block copolymer containing an intermediate random block, wherein the hydroxyl functional monomer randomly occupies the first and second block, as well as in the middle of the block.

Final Office Action at 6; internal citation omitted.

Claim 1 as amended recites a block polymer wherein, *inter alia*, "the intermediate block is totally or partially derived from a combination of monomers chosen from monomers of types (a) and (b) above with monomers chosen from types (c) and (d) above, the monomers chosen from monomers of types (a) and (b) being interspersed with the monomers chosen from monomers of types (c) and (d)." Monomer types (a) through (d) are defined in the claim. Schimmel does not teach or suggest polymers comprising an intermediate block that meets this limitation; hydroxy-functional monomers such as hydroxyalkyl (meth)acrylates do not fall into any of monomer types (a)-(d), and the other monomers in the polymers of Schimmel are not interspersed with respect to each other. The presence of monomers such as 2-ethylhexyl methacrylate in

the polymers of Schimmel (see, e.g., *id.* at Example A) does not mean that they meet the above limitations, because the 2-ethylhexyl methacrylate is not interspersed with a monomer of type (a) or (b) in the random intermediate block, as is required by claim 1 as amended.

The secondary references do not remedy this deficiency because they provide no teaching or suggestion that would lead one of ordinary skill in the art to modify the hydroxy-functional monomers of Schimmel or to intersperse other monomers as claimed. Therefore, Applicants respectfully submit that the instant claims as amended would not have been obvious over Schimmel in view of Graulus, Grubbs, or Charmot.

Frechet A and Frechet B

The claimed invention, as-amended, would not have been obvious in view of Frechet A and B because it fails to teach or suggest each and every limitation. Applicants' claims as amended require, *inter alia*, that the polymer have a polydispersity index (PDI) of greater than or equal to 2.5, that the at least one first block be completely or partially derived from monomers as defined in parts (a) and (b) of claim 1 as amended, and that the at least one second block be completely or partially derived from monomers as defined in parts (c) and (d) of claim 1 as amended. The Frechet references do not disclose polymers that meet this limitation. However, the Examiner alleges that it would have been "obvious and fully within the purview of one having ordinary skill in the art to control the optimum molecular weight, polydispersity, . . . by varying experimental parameters . . . as shown in ancillary references, US 5,994,446, US 6,518,364 and US 6,410,666 . . ." Final Office Action at 9.

These references do not recognize polydispersity index as a result-effective parameter, and, therefore, one skilled in the art would not have been motivated to modify the various synthetic parameters in order to arrive at the claimed polydispersity index. See M.P.E.P. § 2144.05(II)(B) ("A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.").

Neither Frechet A, Frechet B, nor the ancillary references disclose that higher polydispersity indices "achieve a recognized result" of greater oil resistance in polymers totally or partially derived from the monomers rejected in claim 1. Applicants further submit that there is no evidence of record that one of ordinary skill in the art would have considered a polydispersity index greater than a given value to be effective to produce an improvement in oil resistance, and would have had no reason to modify the teachings of Frechet A and/or B to meet the limitation, "wherein the block polymer has a polydispersity index I of greater than or equal to 2.5." The Examiner is respectfully reminded that "[i]f the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. See 37 CFR 1.104(d)(2)." M.P.E.P. § 2144.03(C). No such affidavit or declaration is of record to support the Examiner's position that multiple modifications, including increasing the polydispersity index to meet the limitations of Applicants' claims, amounts to routine experimentation. Applicants therefore respectfully submit that this position is

inappropriate, and indeed, that these modifications exceed routine experimentation in view of the prior art and are impermissible hindsight.

The inventive polymers have good oil resistance, as shown by the evidence provided in the Rule 132 Declaration of Bertrand Lion filed January 7, 2008. Applicants respectfully submit that this oil resistance was unpredictable in view of the prior art. The claimed polymers are novel and there is no evidence of record or findings of fact showing a basis in the prior art by which one of ordinary skill would be able to predict this oil resistance. Applicants further submit that the scope of the claim is commensurate with the evidence presented. Applicants conclude that in the absence of evidence and findings of fact to the contrary, the January 7, 2008 Declaration establishes unpredictable features of Applicants' polymers and that they are therefore not obvious.

Anton

The Examiner alleges that Anton discloses representative polymer architectures at col. 4 ll. 28-60. Final Office Action at 7-8. In Applicants' previous response filed March 23, 2009, Applicants pointed out how each of these representative architectures fails to meet the relevant structural limitations. See *id.* at 15-16. These arguments, which are incorporated herein by reference, were newly formulated in the response of March 23, 2009, and Applicants submit that they demonstrate the inapplicability of Anton as a primary reference against the instant claims. The Examiner did not provide a response to these arguments in the Final Office Action. Applicants point out that the instant amendments of claim 1 further distinguish it from Anton. Applicants therefore request that this rejection be withdrawn.

Applicants further submit that, as argued above with respect to Frechet A and B, neither Anton nor the ancillary references establish that higher polydispersity indices predictably “achieve a recognized result” of greater oil resistance, which was demonstrated for Applicants’ claimed subject matter. Thus, one of ordinary skill in the art would not have considered a polydispersity index greater than a given value to be effective to produce an improvement in oil resistance, and would have had no reason to modify the teachings of Anton to meet the limitation, “wherein the block polymer has a polydispersity index I of greater than or equal to 2.5.” Therefore, Applicants respectfully submit that the instant claims as amended would not have been obvious over Anton in view of Graulus, Grubbs, or Charmot.

Conclusion

Applicants respectfully submit that the claimed subject matter is not obvious over the cited references for the above reasons and the reasons of record, and request withdrawal of the rejections under 35 U.S.C. § 103(a).

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By:



Adam M. Breier, Ph.D.
Reg. No. 63,718